

**REMARKS/ARGUMENTS**

Reexamination of the captioned application is respectfully requested.

**A. SUMMARY OF THIS AMENDMENT**

By the current amendment, Applicants basically:

1. Editorially amend claims 1, 6 – 8, 10, 12, 31, and 32.
2. Cancel claims 2 – 5, 13 – 15, and 17 – 20 without prejudice or disclaimer.
3. Add new claims 35-52.

**B. THE NEW CLAIMS**

New claims 35 – 52 are copied from claims 1 – 3, 7, 11 – 14, 17, 20 – 21, 27 – 28, 32, 34 – 50 of United States Patent Application 10/717,313 (attorney docket 2380-776). In view of the provisional double patenting rejection of claims 1 – 30 of the captioned application over the claims of United States Patent Application 10/717,313, the new claims now added to the captioned application are not restrictable from the existing claims of the captioned application. Therefore, it is respectfully requested that the new claims be examined.

Applicant notes that the prior art rejections levied in United States Patent Application 10/717,313 are based on the same primary reference (U.S. Publication 2003/0012267 to Jitsukawa et al.) and secondary reference (U.S. Patent 5,790,606 to Dent et al.) as are the prior art rejections of the captioned application. Applicant points this fact out to emphasize the appropriateness of inclusion of the new claims in the captioned application.

Applicant has traversed the rejections of the subject matter of the new claims as being patentable over U.S. Publication 2003/0012267 to Jitsukawa et al. and/or any

combination of U.S. Publication 2003/0012267 to Jitsukawa et al. and U.S. Patent 5,790,606 to Dent et al.. Applicant believes those traversals to be cogent and accordingly reiterates the same below with respect to the new claims.

Applicant's new independent claims 35 and 61 are conspicuously directed to a joint searcher and channel estimator/method which is arranged to essentially jointly and concurrently consider dimensionally differentiated plural signals provided by the antenna structure for determining both a time of arrival and channel coefficient.

U.S. Publication 2003/0012267 to Jitsukawa et al. does not teach or suggest, e.g., joint and concurrent consideration of dimensionally differentiated plural signals as required by independent claims 35 and 61.

As evident from paragraph [0033]+ of Jitsukawa, phase difference estimators 61<sub>1</sub> through 62<sub>L</sub> are dedicated and thus confined to their respective time periods t<sub>1</sub> through t<sub>L</sub>. That is, estimator 62<sub>i</sub> uses sample data at a discrete time t<sub>i</sub> to perform correlation calculations and estimate phase difference among antenna elements at the time (t<sub>i</sub>) in question.

In Jitsukawa the phase difference for each i<sup>th</sup> sample is calculated according to Equation 5 (reproduced below). Equation 5 compares the complex baseband value of the signal between antenna index n+1 and antenna index n. Thus, Equation 5 of Jitsukawa implements a sequential rather than a joint and concurrent determination.

$$DI = \frac{1}{N-1} \sum_{n=1}^{N-1} \frac{x_{(n+1)i}}{x_{ni}} = \frac{1}{N-1} \sum_{n=1}^{N-1} \frac{a_{(n+1)i} \exp[j(\alpha + n\Delta\theta)] + \eta_{(n+1)i}}{a_{ni} \exp[j(\alpha + (n-1)\Delta\theta)] + \eta_{ni}}$$

Thus, in Jitsukawa the correlation is made discretely, and therefore the correlation is not jointly and essentially concurrently based dimensionally differentiated plural signals. Further in this regard, see, e.g., paragraph [0037]+.

Moreover, the numerical expressions of Jitsukawa such as Expression 5 are based only on one index (in expression 5 the index “n” pertains to the antenna number). The single index expressions of Jitsukawa prove that Jitsukawa does not jointly consider data organized as a function of two indices.

By contrast, Applicant calculates the phase difference for each  $i^{\text{th}}$  sample jointly, e.g., utilizing all the baseband values jointly and concurrently. See, for example, the Fast Fourier Transform equations of Applicant’s disclosure which indicates the joint utilization of all baseband values.

Applicant incorporates and realleges herein his patentability arguments with respect to previously pending claims.

In view of the foregoing and other considerations, all claims – including the new claims -- are deemed in condition for allowance. A formal indication of allowability is earnestly solicited.

### **C. MISCELLANEOUS**

In view of the foregoing and other considerations, all claims are deemed in condition for allowance. A formal indication of allowability is earnestly solicited.

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

FELTER  
Serial No. 10/717,205

**Atty Dkt:** 2380-796  
**Art Unit:** 2617

Should the Examiner feel that an interview with the undersigned would facilitate allowance of this application, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

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